

Name: _____
PC: Solving Systems of Equations Algebraically

Date: _____
Ms. Loughran

Do Now:

1. Solve the following system of equations:

$$y = x + 1$$

$$2x + y = -2$$

Models:

1. Solve the system of equations:

$$3x + y = 3$$

$$7x + 2y = 1$$

Classwork:

1. Solve the system of equations algebraically by substitution and then by elimination:

$$2x - y = -1$$

$$2x + y = -7$$

2. Solve the system of equations algebraically by substitution and then by elimination:

$$2x + 2y = 3$$

$$x = 4y - 1$$

3. Solve the system of equations algebraically by substitution and then by elimination:

$$x - 2y = 3$$

$$-2x + 4y = 1$$

4. Solve the system of equations algebraically by substitution and then by elimination:

$$2x - y = 1$$

$$4x - 2y = 2$$

5. Solve the system of equations algebraically by substitution and then by elimination:

$$3x + 2y = 2$$

$$5x + 7y = -4$$

Summary

For a system of linear equations, there can be:

1.

2.

3.

Answer the following question on your index card:

Which method (substitution or elimination) do you think is easier? Explain why.

Practice

Solve each of the following systems of equations algebraically.

1. $y = -x + 2$
 $x - y = 0$

2. $x + 2y = 1$
 $5x + 3y = -23$

3. $x - y = 0$
 $7x + y = 0$

4. $8x + y = -16$
 $-3x + y = -5$

5. $2x + y = 5$
 $4x + 2y = 10$

6. $x - y = 2$
 $-2x + 2y = 5$

7. $3x + 4y = -1$
 $2x + 5y = 4$

8. $4x - 3y = 25$
 $-3x + 8y = 10$

9. $5x + 4y = -30$
 $3x - 9y = -18$

10. $2x + 8y = 6$
 $-5x - 20y = -15$

11. $5x + 4y = -14$
 $3x + 6y = 6$

12. $-4x - 15y = -17$
 $5y = x - 13$

13. $8x + 14y = 4$
 $-6x - 7y = -10$

14. $2x - y = 1$
 $4x - 2y = 2$

15. $\frac{1}{5}x + \frac{1}{2}y = 8$
 $x + y = 20$

16. $\frac{1}{5}x - \frac{1}{3}y = 1$
 $-3x + 5y = 9$

17. $2.5x - 3y = 1.5$
 $10x - 12y = 6$

18. $-7x - 8y = 9$
 $-4x + 9y = -22$

19. For each of the following systems, find a value of k such that the system has infinitely many solutions.

(a) $4x + 3y = -8$
 $x + ky = -2$

(b) $3x - 12y = 9$
 $x - 4y = k$

It is possible to find values of k such that the systems have no solutions?
Explain why or why not for each system.

20. On the index card that you were given, write a linear equation.

